

Appl. No. 09/819,332

Reply to Office Action of November 4, 2004

### REMARKS

The following remarks are offered in response to the Office Action dated November 4, 2004. Claim 41 is amended herein. Claims 1-40 and 83-84 were previously withdrawn in response to a restriction requirement. Claims 41-82 remain pending. The Commissioner is authorized to charge the Applicants' account, Deposit Account No. 05-1328, for any fees required by this response. Reconsideration and reexamination of this application is respectfully requested in view of the following remarks. The support for the amendment of Claim 41 can be found at page 7, lines 24-25, page 8, lines 6-7 and page 9, lines 8-9 of the current application.

In the Office Action, the Examiner made the following rejections:

Claims 41, 42, 43, 54, 81, and 82 were rejected under 35 U.S.C §102(b) as being anticipated by U.S. 5,627,143 to Sawdon ("Sawdon");

Claims 41-44, 66, 67, 68, 81, and 82 were rejected under 35 U.S.C §102(b) as being anticipated by U.S. 4,282,928 to McDonald et al. ("McDonald");

Claims 41-43, 66-68, 81, and 82 were rejected under 35 U.S.C §102(b) as being anticipated by U.S. 4,248,304 to Phillips ("Phillips"); and

Claims 41-43, 51, 53, 81, and 82 were rejected under 35 U.S.C §102(b) as being anticipated by U.S. 4,011,908 to Holm ("Holm").

Additionally, the Examiner objected to claims 45-53, 55-65 and 69-80 as dependent on a rejected base claim, but indicated such claims would be allowable if rewritten in independent form. The Applicants gratefully acknowledge the Examiner's indication of allowability.

During a personal interview conducted February 2, 2005, the Applicants, represented by attorney Douglas J. Collins and Examiner Webb discussed the rejections contained in the Office Action, dated November 4, 2004, and the Sawdon, McDonald, Phillips and Holm references.

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Applicants respectfully submitted that none of the cited references discuss or suggest pretreating oil by the particular pretreatment steps now claimed by Applicants and forming a water-in-oil emulsion.

Applicants stated that Sawdon discloses a wellbore fluid that has an enhanced ability to biodegrade. The purpose of Sawdon is to lessen the impact of wellbore fluid on the environment by providing a wellbore fluid with an enhanced capacity for biodegradation. However Sawdon does not disclose pretreating the oil by biodegrading the oil.

In this aspect of the invention, the oil of the oil phase should be one which is capable of biodegrading in the presence of said nutrients under anaerobic conditions. (See Sawdon col. 3, ln. 49-51).

The cuttings which are contaminated with the drilling fluid may be discharged to the ocean floor or land farmed by spreading the cuttings on the land whereupon natural biodegradation processes effectively remove the oil contamination. (See Sawdon col. 4, ln. 17-21).

Therefore Sawdon does not teach or suggest pretreating oil by biodegrading the oil and forming a water-in-oil emulsion. Applicants and the Examiner generally agreed on this point.

Applicants also stated that Sawdon does not teach a water-in-oil emulsion including a functionalized polymer, either by adding a functionalized polymer or functionalizing a functionalizable polymer. Applicants and the Examiner generally agreed on this point.

Applicants stated that McDonald discloses the use of spheroidal microgels containing a crosslinked polymer that are used to either decrease the mobility of a fluid or plug high permeability zones in a subterranean formation. While the microgels may be prepared using a water-in-oil polymerization technique (see col. 4, ln. 59 - col. 5, ln. 16), the microgel containing the polymer is dispersed in either water or the water phase of a water-in-oil emulsion.

In the practice of employing the aforementioned microgels in a process for recovering oil from a subterranean formation, it is desirable to disperse the microgel in a fluid medium, preferably water or a water-in-oil emulsion... (See McDonald col. 6, ln. 32-34).

In addition to water and other suitable aqueous media, the fluid medium may comprise... and most often water-in-oil emulsions wherein the microgels reside in the aqueous phase of such emulsions. (See McDonald col. 7, ln. 30-34).

Thus the polymer component of the microgel is not a part of nor added to the oil to be used in forming a water-in-oil emulsion, but is a part of an aqueous solution or the water phase

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of a water-in-oil emulsion. Therefore McDonald does not teach or suggest pretreating the oil to be used in an emulsion by the addition of a polymer. Applicants and the Examiner generally agreed on this point.

Phillips discusses a method for producing water-soluble polymers for use as viscosity increasing additives for water flooding used in enhanced oil recovery.

The present invention is based on our discovery that certain water-soluble partially hydrolyzed acrylamide polymers are particularly well adapted for use as *viscosity-increasing additives* in *aqueous flooding media*, and that increased recovery of oil can be realized by the above described flooding or driving techniques employing a viscous *aqueous solution* of such agent as the flooding or driving medium

(See Phillips col. 1, ln. 21-28).

Therefore it is clear that Phillips uses such polymers to increase the viscosity of an aqueous flooding media and not for any flooding media comprising a water-in-oil emulsion.

The reference in Phillips to water-in-oil emulsions concerns the method by which the polymers are manufactured, not the form of the fluid used for enhanced oil recovery. Phillips conducts emulsion polymerization using a water-in-crude oil emulsion and then inverts the emulsion to form a water continuous emulsion wherein the polymer will act as the aqueous viscosifier.

Acrylamide polymers as well as other water-soluble vinyl polymers and copolymers may be *formed* into or *prepared by* polymerization in *the form of water-in-oil emulsions*. (see Phillips col. 2, ln. 40-43).

The first reaction is conducted in the plant for the *conversion* of the acrylonitrile *in the form of a water-in-oil emulsion* into acrylonitrile. (see Phillips col. 4, ln. 12-14).

After preparing the acrylamide emulsion as described above, they are then pumped to another reactor... where they are subjected to polymerization conditions *to produce the water-in-crude-oil emulsions of the acrylamide polymers*. (see Phillips col. 8, ln. 13-17).

Therefore it is clear that when Phillips refers to water-in-oil emulsions, such references are to emulsions used in the manufacture of polymers.

The water-in-crude-oil emulsions of the polymer described above... may be inverted to produce dilute solutions of the polymers which would then be pumped into the formation through one or more injection wells.

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(See Phillips col. 10, ln. 16-21). Alternatively, Phillips states that the emulsion may be injected into the formation together with an inverting agent to supply the dilute solution. However, in either case it is the dilute aqueous solution that is used for enhanced oil recovery, not an oil-in-water emulsion, and the polymer in either case resides in the water phase, not the oil phase. The Applicants and the Examiner generally agreed on these points.

Holm discloses a micellar flooding process for recovering oil from hydrocarbon reservoirs which includes the injection of three separate fluids successively into the reservoir. (See abstract). Holm discloses a method of injecting 1) an aqueous alkaline alkali metal silicate solution, 2) followed by the micellar solution, which can be an emulsion, 3) followed by injecting an aqueous water flooding medium. (See abstract). Holm does not however discuss forming a water-in-oil emulsion after pretreating the oil phase by the addition of a polymer. Holm only discloses the addition of a polymer to the aqueous water flooding medium, not the micellar solution.

Also, the aqueous flooding medium can be rendered more viscous by the addition of a small amount of a water-soluble polymer... (See Holm at col. 12, ln. 5-7).

Thus Holm does not teach or suggest pretreating the oil to be used in an emulsion by the addition of a polymer. The Examiner and Applicants generally agreed on this point.

Accordingly, none of the references teach or suggest the invention currently claimed by Applicants. The application is believed to be in condition for allowance. Applicants therefore respectfully request that this application be allowed and passed to issue.

The Applicants also noted that they have not received an initialed copy of the IDS references submitted by an IDS of September 24, 2001. The Examiner pulled this IDS up electronically during the interview and asked that the Applicants note this in the interview summary.


Lastly, the Examiner asked that the Applicants attach a copy of the interview summary to this response. A copy of the interview summary is therefore attached hereto.

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If Examiner wishes to discuss this application with counsel, please contact the undersigned.

Respectfully submitted,

Date: 2/4/05

  
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Certificate of Facsimile Transmission

I hereby certify that this correspondence is being transmitted via facsimile to Examiner Gregory Webb, Technology Center 1751, United States Patent and Trademark Office at (703) 872-9306 on February 4, 2005.

  
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Margaret Gnewuch

Interview Summary	Application No.	Applicant(s)	
	09/819,332	VARADARAJ ET AL.	
	Examiner	Art Unit	
	Gregory E. Webb	1751	

All participants (applicant, applicant's representative, PTO personnel):

(1) Gregory E. Webb.  (3) \_\_\_\_\_

(2) Doug Collins. (4) \_\_\_\_\_

Date of Interview: 02 February 2005.

Type: a) ☐ Telephonic b) ☐ Video Conference  
c) ☒ Personal [copy given to: 1) ☐ applicant 2) ☒ applicant's representative]

Exhibit shown or demonstration conducted: d) ☐ Yes e) ☐ No.  
If Yes, brief description: \_\_\_\_\_

Claim(s) discussed: 41,42,54 and 66.

Identification of prior art discussed: Sawdon, McDonald, Phillips, Holm.


Agreement with respect to the claims f) ☐ was reached. g) ☒ was not reached. h) ☐ N/A.

Substance of Interview including description of the general nature of what was agreed to if an agreement was reached, or any other comments: See Continuation Sheet.

(A fuller description, if necessary, and a copy of the amendments which the examiner agreed would render the claims allowable, if available, must be attached. Also, where no copy of the amendments that would render the claims allowable is available, a summary thereof must be attached.)

THE FORMAL WRITTEN REPLY TO THE LAST OFFICE ACTION MUST INCLUDE THE SUBSTANCE OF THE INTERVIEW. (See MPEP Section 713.04). If a reply to the last Office action has already been filed, APPLICANT IS GIVEN ONE MONTH FROM THIS INTERVIEW DATE, OR THE MAILING DATE OF THIS INTERVIEW SUMMARY FORM, WHICHEVER IS LATER, TO FILE A STATEMENT OF THE SUBSTANCE OF THE INTERVIEW. See Summary of Record of Interview requirements on reverse side or on attached sheet.

Examiner Note: You must sign this form unless it is an Attachment to a signed Office action.

  
Examiner's signature, if required

### Summary of Record of Interview Requirements

#### Manual of Patent Examining Procedure (MPEP), Section 713.04, Substance of Interview Must be Made of Record

A complete written statement as to the substance of any face-to-face, video conference, or telephone interview with regard to an application must be made of record in the application whether or not an agreement with the examiner was reached at the interview.

#### Title 37 Code of Federal Regulations (CFR) § 1.133 Interviews

##### Paragraph (b)

In every instance where reconsideration is requested in view of an interview with an examiner, a complete written statement of the reasons presented at the interview as warranting favorable action must be filed by the applicant. An interview does not remove the necessity for reply to Office action as specified in §§ 1.111, 1.135. (35 U.S.C. 132)

#### 37 CFR §1.2 Business to be transacted in writing.

All business with the Patent or Trademark Office should be transacted in writing. The personal attendance of applicants or their attorneys or agents at the Patent and Trademark Office is unnecessary. The action of the Patent and Trademark Office will be based exclusively on the written record in the Office. No attention will be paid to any alleged oral promise, stipulation, or understanding in relation to which there is disagreement or doubt.

The action of the Patent and Trademark Office cannot be based exclusively on the written record in the Office if that record is itself incomplete through the failure to record the substance of interviews.

It is the responsibility of the applicant or the attorney or agent to make the substance of an interview of record in the application file, unless the examiner indicates he or she will do so. It is the examiner's responsibility to see that such a record is made and to correct material inaccuracies which bear directly on the question of patentability.

Examiners must complete an Interview Summary Form for each interview held where a matter of substance has been discussed during the interview by checking the appropriate boxes and filling in the blanks. Discussions regarding only procedural matters, directed solely to restriction requirements for which interview recordation is otherwise provided for in Section 812.01 of the Manual of Patent Examining Procedure, or pointing out typographical errors or unreadable script in Office actions or the like, are excluded from the interview recordation procedures below. Where the substance of an interview is completely recorded in an Examiner's Amendment, no separate Interview Summary Record is required.

The Interview Summary Form shall be given an appropriate Paper No., placed in the right hand portion of the file, and listed on the "Contents" section of the file wrapper. In a personal interview, a duplicate of the Form is given to the applicant (or attorney or agent) at the conclusion of the interview. In the case of a telephone or video-conference interview, the copy is mailed to the applicant's correspondence address either with or prior to the next official communication. If additional correspondence from the examiner is not likely before an allowance or if other circumstances dictate, the Form should be mailed promptly after the interview rather than with the next official communication.

The Form provides for recordation of the following information:

- Application Number (Series Code and Serial Number)
- Name of applicant
- Name of examiner
- Date of interview
- Type of interview (telephonic, video-conference, or personal)
- Name of participant(s) (applicant, attorney or agent, examiner, other PTO personnel, etc.)
- An indication whether or not an exhibit was shown or a demonstration conducted
- An identification of the specific prior art discussed
- An indication whether an agreement was reached and if so, a description of the general nature of the agreement (may be by attachment of a copy of amendments or claims agreed as being allowable). Note: Agreement as to allowability is tentative and does not restrict further action by the examiner to the contrary.
- The signature of the examiner who conducted the interview (If Form is not an attachment to a signed Office action)

It is desirable that the examiner orally remind the applicant of his or her obligation to record the substance of the interview of each case. It should be noted, however, that the Interview Summary Form will not normally be considered a complete and proper recordation of the interview unless it includes, or is supplemented by the applicant or the examiner to include, all of the applicable items required below concerning the substance of the interview.

A complete and proper recordation of the substance of any interview should include at least the following applicable items:

- 1) A brief description of the nature of any exhibit shown or any demonstration conducted,
- 2) an identification of the claims discussed,
- 3) an identification of the specific prior art discussed,
- 4) an identification of the principal proposed amendments of a substantive nature discussed, unless these are already described on the Interview Summary Form completed by the Examiner,
- 5) a brief identification of the general thrust of the principal arguments presented to the examiner,  
(The identification of arguments need not be lengthy or elaborate. A verbatim or highly detailed description of the arguments is not required. The identification of the arguments is sufficient if the general nature or thrust of the principal arguments made to the examiner can be understood in the context of the application file. Of course, the applicant may desire to emphasize and fully describe those arguments which he or she feels were or might be persuasive to the examiner.)
- 6) a general indication of any other pertinent matters discussed, and
- 7) if appropriate, the general results or outcome of the interview unless already described in the Interview Summary Form completed by the examiner.

Examiners are expected to carefully review the applicant's record of the substance of an interview. If the record is not complete and accurate, the examiner will give the applicant an extendable one month time period to correct the record.

#### Examiner to Check for Accuracy

If the claims are allowable for other reasons of record, the examiner should send a letter setting forth the examiner's version of the statement attributed to him or her. If the record is complete and accurate, the examiner should place the indication, "Interview Record OK" on the paper recording the substance of the interview along with the date and the examiner's initials.

Continuation Sheet (PTOL-413)

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Continuation of Substance of Interview including description of the general nature of what was agreed to if an agreement was reached, or any other comments: Sawdon fails to teach funtional polymer. Applicant will consider addressing the limitation of the polymer as being functionalized. Sawdon only teaches a biodegradable polymer and not blotreating the polymer prior to addition. McDonald and Phillips teach polymers (polyacrylamide) which are water soluble and added or formed directiy to the water phase and not the oil phase Phototreating was used strictly for initiating the polymerization reaction. Holm teaches the direct addition of the polymer to the water phase and the polymer is intended only for use in the aqueous dry fluid. The examiner agreed to update the search, and sign the 092701 IDS..